

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE		2. REPORT TYPE Viewgraphs		3. DATES COVERED	
4. TITLE AND SUBTITLE NexGenBus Profile Brief (Viewgraphs)				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Sid Jones				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Air Warfare Center Aircraft Division 22347 Cedar Point Road, Unit #6 Patuxent River, Maryland 20670-1161				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Naval Air Systems Command 47123 Buse Road Unit IPT Patuxent River, Maryland 20670-1547				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Sid Jones
Unclassified	Unclassified	Unclassified	Unclassified	10	19b. TELEPHONE NUMBER (include area code) (301) 342-1601

NexGenBus Profile



Sid Jones
NexGenBus Project Manager

10/7/99

NexGenBus

Scope



- Minimum required to achieve interoperability between multiple vendors' end-items on a Fibre Channel instrumentation bus.
- This document only addresses the ability to move the data.
 - Data format is beyond the scope

10/7/99

20000407 170

DTIC QUALITY INSPECTED 1

NexGenBus

Order of Precedence

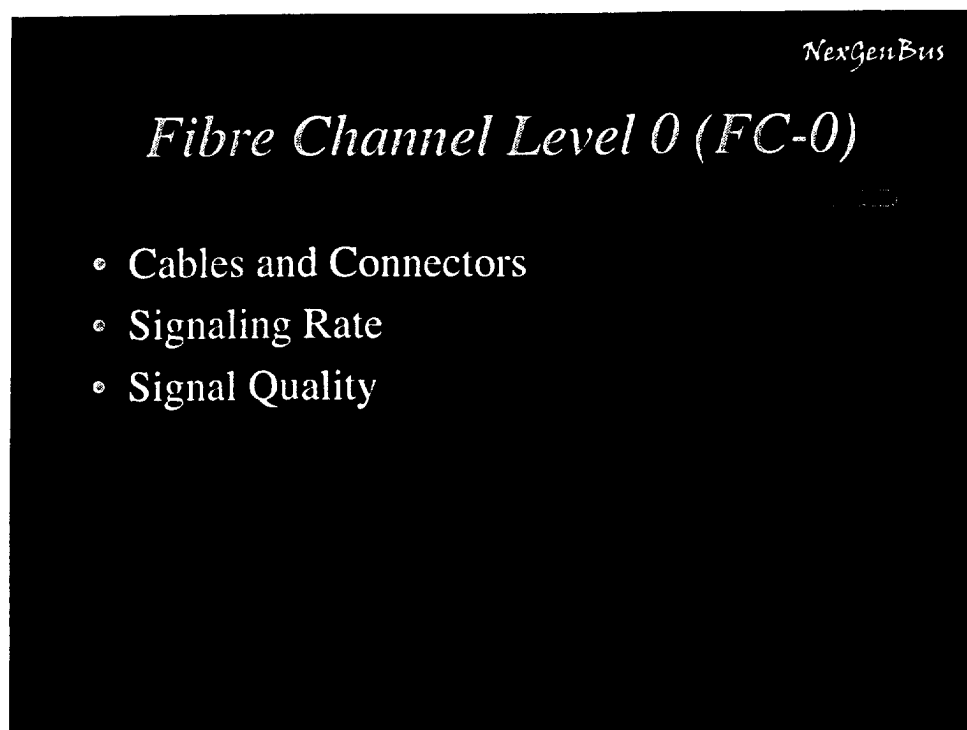
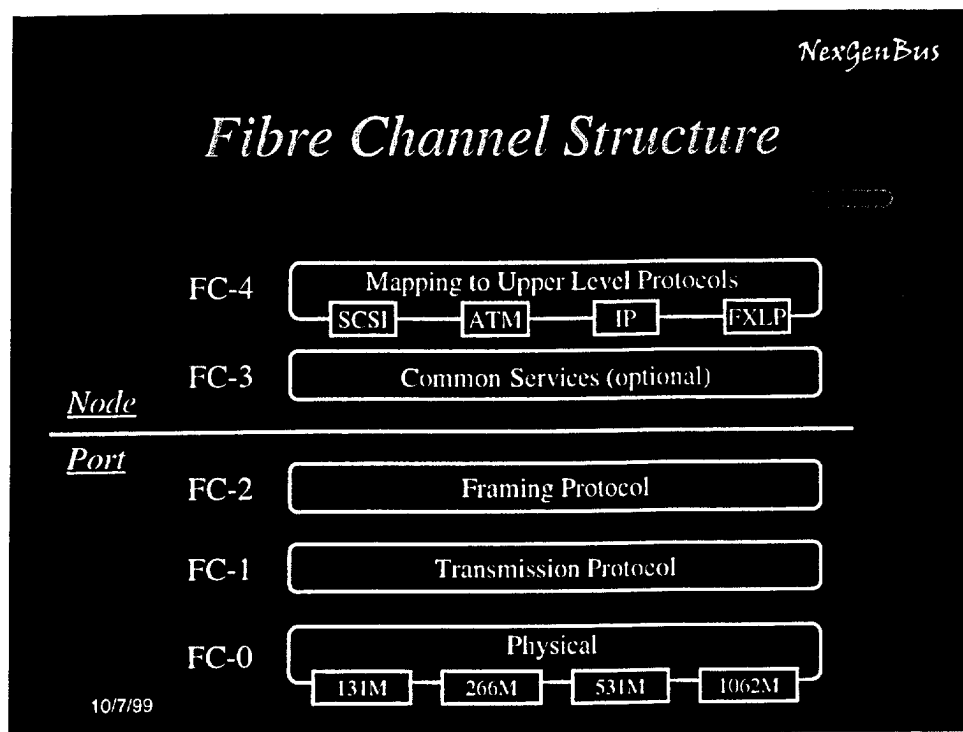
- The order of precedence for instrumentation interoperability shall be:
 - This document
 - The FC-AE profile (when published)
 - The Fibre Channel suite of standards.

NexGenBus

Responsibility

- Cognizance of this profile remains with the RCC Telemetry Group.
- The Fibre Channel documents including the FC-AE Profile Technical Report are the responsibility of the T11 Technical Committee (TC)

10/7/99



NexGenBus

Fibre Channel Level 1 (FC-1)

- No Changes

NexGenBus

Fibre Channel Level 2 (FC-2)

- Port Type
- Login
- Class of Service

NexGenBus

Fibre Channel Level 3 (FC-3)

- No Changes

NexGenBus

Fibre Channel Level 4 (FC-4)

- Protocol

FC-PH-x (X3.230, X3.297, X3.303)	
Section	Change
2	Normative References
	MIL-C-38999 Connectors, Electrical, Circular, General Specification For. <i>[Gore connector is not strictly per std, Thomas will modify appropriately]</i>
	MIL-C-17/Quad Cable <i>[Gore cable is not strictly per std, Thomas will modify appropriately]</i>
3	Definitions and Conventions
3.1.70	NL Port functionality shall be required
5	FC-0 Functional Characteristics
5.1	Addition of Gore cable in the general characteristic section.
5.1	1,063 Mbaud support required
5.7	Media designation for Quad cable will be 'QU' <i>[We need to pick a designation to identify this quad cable in the FC-0 nomenclature like in Table 3 below.]</i>

10/7/99

5.8	Update Table 3									
	<table><tr><th colspan="3">Part of Table 3, Electrical Media Signal Interface Overview</th></tr><tr><td colspan="3">100 MB/sec 1,062.5 Gbaud</td></tr><tr><td>100-TV-EL-S Subclause 7.2 0-25m</td><td>100-MI-EL-S Subclause 7.2 0-10m</td><td>100-QU-EL-S Subclause 7.4 0-25m</td></tr></table>	Part of Table 3, Electrical Media Signal Interface Overview			100 MB/sec 1,062.5 Gbaud			100-TV-EL-S Subclause 7.2 0-25m	100-MI-EL-S Subclause 7.2 0-10m	100-QU-EL-S Subclause 7.4 0-25m
Part of Table 3, Electrical Media Signal Interface Overview										
100 MB/sec 1,062.5 Gbaud										
100-TV-EL-S Subclause 7.2 0-25m	100-MI-EL-S Subclause 7.2 0-10m	100-QU-EL-S Subclause 7.4 0-25m								
7	Electrical Cable Interface Specification									
	<i>[Thomas updating based on lab tests]</i>									
	<i>[Update table 10]</i>									
7.4	Quad Data Link -- Info will have to be added to include the Gore cable. It should follow the format in the previous/current sections. Content will be based on the results from the test plan and cable mfr.									

10/7/99

NexGenBus

9	Electrical Cable Plant Specification
9	<i>[Thomas updating based on lab tests]</i>
9.5	Quad Cable Plant Specification (new section) A new section will have to be added to include the Gore cable. It should follow the format in the previous sections. Content will be based on the results from the test plan.
22	Classes of Service
22.3	Class 3 – Datagram support is required.
23	Login and Service Parameters
23	Nodes shall support implicit login and optionally support explicit login. <i>[Here's my thinking...see section 6.3.4]</i>

10/7/99

NexGenBus

<u>FC-AL (X3.272)</u>	
Section	Change
11	Clock Synchronization Service (New Section)
	Each L_Port shall be capable of storing a time propagation delay value. Whenever the timeserver sends a time value, the L_Port will add its delay value to the time value to update its real-time clock. The delay value format shall be a binary representation of nanoseconds delay. In order to accommodate the maximum delay from a timeserver, a 16 bit data field should be used.
	<i>Max delay = 125 nodes x 240ns delay/node + 126 links x 5ns/m x 30m = 48,900ns</i>
<u>FC-IP, RFC 791?</u>	
Section	Change
?	?
	IP support as an upper layer protocol is required

10/7/99

NexGenBus

Avionics Working Group

- Technical Committee T11.4 sponsors a Fibre Channel Avionics Environment (FC-AE) group
- Produce a "Profile" using Fibre Channel in an avionics environment

www.t11.org

10/7/99

NexGenBus

Informative Annex

- Topics that may make a system more useful, but not required for interoperability
 - Architecture
 - Open System
 - Topology

10/7/99

NexGenBus

Informative Annex - cont.

- Fault Tolerance
 - » Port Bypass
 - » Hub
 - » Redundancy
 - » Addressing
- Timing
 - » Data Correlation
 - » Simultaneous Sampling
 - » Data Source Reconstruction

10/7/99

NexGenBus

Informative Annex - cont.

- Interoperability
 - » Physical
 - » Port Type
 - » Signaling Rate
 - » Login
 - » Class of Service
 - » Protocol

10/7/99

